REMARKS

At the outset, the Examiner is thanked for the thorough review and consideration of the pending application. The Final Office Action dated April 7, 2005 has been received and its contents carefully reviewed.

Claims 1, 9, 21, and 26–27 are hereby amended, and claims 2, 10, 16–17 and 22–23 are canceled. Accordingly claims 1, 3–9, 11–15, 18–21, and 24–27 are currently pending, with claims 18, 19, 24, and 25 withdrawn from consideration. Reexamination and reconsideration of the pending claims are respectfully requested.

In the Office Action, claims 1, 7–9, 15–17, 20–23, and 26–27 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application Publication No. 2002/0008792 by Chung et al. (hereinafter "Chung"); claims 2–3, 5–6, 10, and 12–14 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Chung in view of U.S. Patent No. 5,253,091 to Kimura et al. (hereinafter "Kimura"); and claims 4 and 11 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Chung in view of Kimura and further in view of U.S. Patent No. 5,436,747 to Suzuki (hereinafter "Suzuki").

In the Office Action, claims 1, 7–9, 15–17, 20–23, and 26–27 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Chung. Applicant respectfully traverses the rejection of claim 1 and requests reconsideration. Independent claim 1 recites "a plurality of liquid crystal cells defined by the gate and data lines, wherein each liquid crystal cell comprises a thin film transistor at a crossing of the gate and data lines, and a pixel electrode connected to the thin film transistor at a first side portion, wherein the liquid crystal cells include a first horizontal line of liquid crystal cells having thin film transistors connected to preceding ones of adjacent data lines, and a second line of liquid crystal cells having thin film transistors connected to successive ones of adjacent data lines," and "a groove formed within a second side portion of the pixel electrode adjacent the plurality of data lines, wherein the second side portion is opposite the first side portion, so that the pixel electrode has a substantially diagonally symmetric shape." Chung fails to teach or suggest at least this feature of the claimed invention. Examiner states that it would have been obvious to place a groove to make the pixel electrode have a substantially diagonally symmetric shape, and that the rearrangement of the parts is within the ordinary level of skill.

Applicant respectfully asserts that the arrangement of the groove is not obvious because the nature of the problem to be solved is not the same for Chung and the present invention. For example, referring to FIG. 8 of the present application, by arranging the groove so that the pixel electrode has a substantially diagonally symmetric shape, the respective locations of the parasitic capacitors Cdp1 and Cdp2 are different along the data lines DLk and DLk+1, respectively. Further, the location of the groove affects the pattern of light leakage through a given pixel area. As such, the "vertical crosstalk and asymmetric light leakage" (¶ 72) mitigated by the pixel electrode of the present invention having a diagonally symmetric shape is different from teaching of Chung, wherein "the parasitic capacitance values between the adjacent data lines and the pixel electrode are not different, and accordingly, the degradation of resolution can be minimized." (Chung, ¶ 40). Applicant respectfully submits that the nature of the problem to be solved is not the same for Chung and the present claimed invention, and that a pixel electrode having a substantially diagonally symmetric shape is not obvious over Chung. Accordingly, Applicant respectfully submits that independent claim 1 and its dependent claims 7–8 are allowable over Chung.

Applicant respectfully traverses the rejection of independent claim 9 and requests reconsideration. Claim 9 recites "a plurality of liquid crystal cells arranged in a matrix pattern defined by the crossings, wherein each of the plurality of liquid crystal cells includes a pixel electrode and a thin film transistor coupled between an adjacent gate line, an adjacent data line, and the pixel electrode, wherein the pixel electrode has a groove formed at a diagonally opposite portion to the thin film transistor, and wherein thin film transistors of consecutive ones of the plurality of liquid crystal cells arranged within a vertical line are alternately coupled to adjacent ones of the plurality of data lines." Nothing in Chung teaches or suggests at least this feature of the claimed invention, for the same or similar reasons as that for independent claim 1. Accordingly, Applicant respectfully submits that claim 9, and claims 17 and 20, which depend from claim 9, are allowable over Chung.

Applicant respectfully traverses the rejection of independent claim 21 and requests reconsideration. Independent claim 21 is allowable in that it recites "a plurality of pixel electrodes arranged in a matrix pattern adjacent the plurality of data lines, wherein each pixel electrode within the plurality has a cut-out portion facing an adjacent data line opposite to a thin

film transistor, wherein the cutout portion is at a diagonally opposite portion of the pixel electrode to the thin film transistor, and wherein thin film transistors of consecutive ones of the plurality of liquid crystal cells arranged within a vertical line are alternately coupled to adjacent ones of the plurality of data lines." Nothing in Chung teaches or suggests at least this feature of the claimed invention, for the same or similar reasons as that for independent claim 1. Accordingly, Applicant respectfully submits that claim 21 is allowable over Chung.

Applicant respectfully traverses the rejection of independent claim 26 and requests reconsideration. Independent claim 26 is allowable in that it recites "a plurality of pixel electrodes arranged in a matrix pattern adjacent the plurality of data lines, wherein each pixel electrode within the plurality has a groove facing an adjacent data line and a substantially diagonally symmetric shape so that a parasitic capacitance at side portions of the plurality of pixel electrodes adjacent the plurality of data lines is substantially equal, and wherein thin film transistors of consecutive ones of the plurality of liquid crystal cells arranged within a vertical line are alternately coupled to adjacent ones of the plurality of data lines." Nothing in Chung teaches or suggests at least this feature of the claimed invention, for the same or similar reasons as that for independent claim 1. Accordingly, Applicant respectfully submits that claim 26 is allowable over Chung.

Applicant respectfully traverses the rejection of independent claim 27 and requests reconsideration. Independent claim 27 is allowable in that it recites "forming a plurality of pixel electrodes arranged in a matrix pattern adjacent the plurality of data lines, wherein each pixel electrode within the plurality has a groove facing an adjacent data line and a substantially diagonally symmetric shape so that a parasitic capacitance at side portions of the plurality of pixel electrodes adjacent the plurality of data lines is substantially equal, and wherein thin film transistors of consecutive ones of the plurality of liquid crystal cells arranged within a vertical line are alternately coupled to adjacent ones of the plurality of data lines." Nothing in Chung teaches or suggests at least this feature of the claimed invention, for the same or similar reasons as that for independent claim 1. Accordingly, Applicant respectfully submits that claim 27 is allowable over Chung.

In the Office Action, claims 2–3, 5–6, 10, and 12–14 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Chung in view of Kimura. Claim 2 is hereby canceled

without prejudice or disclaimer. Applicants respectfully traverse the rejection of claims 3, and 5–6 for the same or similar reasons as the rejection of claims 1 above. For example, Kimura fails to cure the deficiency of Chung to teach or suggest a "a plurality of liquid crystal cells defined by the gate and data lines, wherein each liquid crystal cell comprises a thin film transistor at a crossing of the gate and data lines, and a pixel electrode connected to the thin film transistor at a first side portion, wherein the liquid crystal cells include a first horizontal line of liquid crystal cells having thin film transistors connected to preceding ones of adjacent data lines, and a second line of liquid crystal cells having thin film transistors connected to successive ones of adjacent data lines," and "a groove formed within a second side portion of the pixel electrode adjacent the plurality of data lines, wherein the second side portion is opposite the first side portion, so that the pixel electrode has a substantially diagonally symmetric shape." Accordingly, Applicant respectfully submits that claims 3, and 5–6, which depend from independent claim 1 are allowable over any combination of Chung and Kimura.

Applicant respectfully traverses the rejection of claims 10 and 12–14 and request reconsideration. Claim 10 is hereby canceled without prejudice or disclaimer. Claims 12–14, which depend from independent claim 9, are allowable because the additional reference, Kimura, fails to cure the deficiency of Chung to teach or suggest a "a plurality of liquid crystal cells arranged in a matrix pattern defined by the crossings, wherein each of the plurality of liquid crystal cells includes a pixel electrode and a thin film transistor coupled between an adjacent gate line, an adjacent data line, and the pixel electrode, wherein the pixel electrode has a groove formed at a diagonally opposite portion to the thin film transistor, and wherein thin film transistors of consecutive ones of the plurality of liquid crystal cells arranged within a vertical line are alternately coupled to adjacent ones of the plurality of data lines." Accordingly, Applicant respectfully submits that claims 12–14, as they depend from independent claim 9, are allowable over any combination of Chung and Kimura.

In the Office Action, claims 4 and 11 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Chung in view of Kimura and further in view of Suzuki. Applicant respectfully traverses the rejection of claim 4 for the same or similar reasons as the rejection of claims 1 above. Kimura and Suzuki, alone or in combination, fail to cure the deficiency of Chung to teach or suggest "a plurality of liquid crystal cells defined by the gate and data lines,

wherein each liquid crystal cell comprises a thin film transistor at a crossing of the gate and data lines, and a pixel electrode connected to the thin film transistor at a first side portion, wherein the liquid crystal cells include a first horizontal line of liquid crystal cells having thin film transistors connected to preceding ones of adjacent data lines, and a second line of liquid crystal cells having thin film transistors connected to successive ones of adjacent data lines," and "a groove formed within a second side portion of the pixel electrode adjacent the plurality of data lines, wherein the second side portion is opposite the first side portion, so that the pixel electrode has a substantially diagonally symmetric shape." Accordingly, Applicant respectfully submits that claim 4, as it depends from claim 1, is allowable over any combination of Chung, Kimura, and Suzuki.

Applicant respectfully traverses the rejection of claim 11 and requests reconsideration for the same or similar reason as that regarding independent claim 9 above. Kimura and Suzuki, alone or in combination, fail to cure the deficiency of Chung to teach or suggest "a plurality of liquid crystal cells arranged in a matrix pattern defined by the crossings, wherein each of the plurality of liquid crystal cells includes a pixel electrode and a thin film transistor coupled between an adjacent gate line, an adjacent data line, and the pixel electrode, wherein the pixel electrode has a groove formed at a diagonally opposite portion to the thin film transistor, and wherein thin film transistors of consecutive ones of the plurality of liquid crystal cells arranged within a vertical line are alternately coupled to adjacent ones of the plurality of data lines." Accordingly, Applicant respectfully submits that claim 11, as it depends from claim 9, is allowable over any combination of Chung, Kimura, and Suzuki.

Applicants believe the foregoing amendments place the application in condition for allowance and early, favorable action is respectfully solicited.

If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at (202) 496-7500 to discuss the steps necessary for placing the application in condition for allowance. All correspondence should continue to be sent to the below-listed address. If these papers are not considered timely filed by the Patent and Trademark Office, then a petition is hereby made under 37 C.F.R. §1.136, and any additional fees required under 37 C.F.R. §1.136 for any necessary extension of time, or any other fees required to complete the filing of this response, may be

charged to Deposit Account No. 50-0911. Please credit any overpayment to deposit Account No. 50-0911. A duplicate copy of this sheet is enclosed.

Dated: March 7, 2006

Respectfully submitted,

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